

Contra Costa & Alameda Counties

CROP CURRENTS

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NOVEMBER 2013

- **CCC Pesticide Applicators Continuing Education Class**
- **Olive Fly Damage**
- **Saving Glyphosate**
- **Management of Peach Leaf Curl – New Approaches**
- **Fertilize Alfalfa in the Fall**
- **Red Blotch – a New Disease of Grape**
- **Announcements** – Pomegranate info, drip recycling, EQIP
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Contra Costa County Pesticide Applicators Continuing Education Classes 2013

Wednesday, November 20 & Saturday, December 7

8:15 am to 12:00pm

Diablo Valley Farm Center, 3020 Second St (at Delta Rd), Knightsen, CA

The class provides 3 hours of continuing education credit for all Private Applicator certificates, QAL, QAC, and PCA licenses. The Contra Costa County Private Applicators with the required continuing education hours and whose last names begin with I through Q will be recertified this year.

- Registration (15 minutes)
- **San Joaquin & Delta Water Quality Coalition** Update (30 minutes)
Mike Wackman, San Joaquin & Delta Water Quality Coalition
- **Open Burning Permit Use, Requirements, and New Fees** (15 minutes)
Gene Mangini, Contra Costa County Department of Agriculture
- **Brown Marmorated Stink Bug:** Identification, Damage, IPM Control Methods (20 minutes)
Karen Adler, Contra Costa County Department of Agriculture
- **New Pesticide Safety Data Sheet Format** (15 minutes)
Nancy Niemeyer, Contra Costa County Department of Agriculture
Rick Ullerich, Cal-OSHA
- Break (10 minutes)
- **Closed Pesticide Mix/load System Use & Requirements** (20 minutes)
Gene Mangini, Contra Costa County Department of Agriculture
- **Pesticide Employee Handler Training Requirements & Pesticide Safety Video** (40 min)
Jorge Vargas, Contra Costa County Department of Agriculture
- **Cherry Pest Update:** Buckskin, Spotted Wing Drosophila, San Jose Scale (40 minutes)
Janet Caprile, UC Cooperative Extension, Contra Costa County

All growers are welcome to attend
Please RSVP by calling 925-646-5250

Olive Fruit Fly Damage

If you have noticed more olive fruit fly (OFF) damage this year, even though you were using your usual pest control program, you are not alone. More damage has been reported from throughout the state. We don't know exactly why we are seeing an increase in damage this year. Some folks have speculated that it may be due to OFF developing resistance to spinosad (the active ingredient in GF-120), our primary control material. However, when insects develop resistance to a material it generally develops more slowly over time and in a more localized pattern. Since the damage was so rapid and widespread, it was probably due to another cause -not resistance to GF-120.

A more likely reason for the sudden increase in damage statewide is the weather. The dry winter and mild temperatures may have contributed to higher winter survival and larger populations of OFF this year. And bait sprays work best under lower population conditions. When we have high fly populations, the large number of flies can consume all the bait droplets before the next application is due, leaving the fruit unprotected and resulting in damage.

Here are some things to keep in mind when using GF-120 under high population pressures:

- Start early - apply the first few bait sprays *before* the fruit becomes susceptible (pit hardening) to reduce the population before fruit damage can occur.
- Use the highest label rate (20 oz/A) mixed at a 1:1.5 dilution.
- Use larger droplets of 4-5mm to reduce evaporation and keep the material in the orchard longer.
- Apply more frequently – alternate rows applications can help to reduce material costs but keep an effective dose in the orchard.

The weather also encouraged many crops to develop earlier than normal this year. The olive fruit doesn't become susceptible to OFF damage until right around pit hardening (usually around mid June). If pit hardening occurred a little earlier than normal, and the OFF populations were high, then the scene would be set for early damage before we might typically be treating for OFF. And the earlier the damage begins the greater the damage can be by harvest.

Whatever the cause(s), here are a few recommendations from our UC experts to help address the issue:

For this year's harvest keep in mind that there is no tolerance for damage on table fruit and about a 10%

tolerance for oil olives. The most important aspect for oil olives is that the fruit should be harvested *early* before it begins to rot. Rotten fruit, not just the presence of olive fly larvae, leads to off flavors in the oil. Press infested fruit as soon as possible after harvest (24 hours or less) or hold in cold storage until pressed.

To avoid damage next year, keep your eye on the OFF population. Surveying dropped fruit for maggot infestation in late winter and spring can give some indication of overwintering olive fly densities and help you to plan an appropriate control program for the coming season.

Set out monitoring traps by March 1. The number of flies caught typically increases in spring, declines during the course of a hot summer, and increase again as the weather cools in late summer. While there is no direct relationship between fruit damage and the number of flies found in traps, trap catches can help to evaluate relative population levels and treatment efficacy by comparing trap catches before and after treatment.

If monitoring (or past damage) indicates a large overwintering population, follow the guidelines to the left for using GF-120 under high pressure situations: apply before the fruit becomes susceptible, use an effective rate and droplet size and reapply frequently enough to keep the bait continually available.

If monitoring indicates a low spring population, you can begin the spinosad bait treatment at pit hardening or when the fruit reaches 10mm in length (mid to late June).

In late summer, if fly captures begin to increase in traps, but few fly stings on fruit are found, continue treatments with spinosad and/or kaolin clay, as usual. However, if fruit monitoring indicates that fly stings are increasing, or if greater than normal fly captures are observed in traps, despite treatments with spinosad bait, you may want to make an application of Danitol. This material is a pyrethroid which has recently been registered on olive and can provide an effective knockdown of a large population. However, it should be used with caution as it is disruptive to beneficial insects and can cause outbreaks of mite or scale pests if used early in the season or too frequently. Its use should be reserved for a single late season (late August/early September) spray when significant damage is anticipated.

More detailed OFF monitoring and management information can be found in the UCIPM Pest Management Guidelines for Olives (<http://www.ipm.ucdavis.edu/PMG/r583301311.htm>).

Saving Glyphosate

By Franz Niederholzer, UC Farm Advisor & John Roncoroni, UC Farm Advisor

Glyphosate, the active ingredient in Roundup, is the most commonly used herbicide in California. Highly effective, safe for the user and the environment, and now inexpensive, glyphosate is a valuable weed management tool. How valuable? *Imagine the cost of weed control if you couldn't count on glyphosate!*

Resistance – the inherited ability of a plant to survive and produce healthy seed after being sprayed with enough material to kill non-resistant plants of the same species – has developed to glyphosate in several weeds in California. These include rigid ryegrass, annual ryegrass, marehail (Horseweed), Hairy fleabane, and jungle rice. Glyphosate resistance is a gradual process --a sort of “resistance creep” -- compared to the sudden resistance that can appear in certain crop/herbicide situations (think Londax® in rice production). Reducing the chance of glyphosate resistance developing in other weed species is the topic of this article. The following are key points to effective glyphosate use in non-cultivated orchards.

Get the best weed control possible when using glyphosate. This means optimum spray solution pH, chemistry and glyphosate concentration. Here's what you want in the tank:

- Spray solution pH = 4-6. If spray water is pH \geq 7, add acidify/buffer first.
- Spray solution hardness <150 ppm calcium or < 300 ppm sodium. Hard water reduces the efficacy of glyphosate. To counter this, add ammonium sulfate (17 lbs/100 gallons of water) or other water treatment before adding glyphosate to the tank. Ammonium ion improves glyphosate performance regardless of water hardness due to improved leaf penetration.
- A solid rate of non-ionic surfactant adjuvant to improve leaf penetration if not included in glyphosate product formulation. Check the label to see what adjuvants can be added to the tank.
- High label rate of glyphosate to kill weeds that are slipping towards resistance. Skimping on glyphosate rate, even if it looks like it works, invites resistance creep. With the low price of glyphosate, don't risk resistance, use a full rate.
- Tank mix glyphosate with postemergent herbicides that can control glyphosate resistant weeds. Possible

options – depending labeling for the specific tree/vine crop -- include Treevix™, Rely 280®, Gramoxone®, Shark® and Venue®. Consult with your PCA for registration status, materials, and rates.

- Careful! Keep glyphosate sprays away from your crop. Avoid drifting glyphosate onto crop leaves or spraying sensitive bark of young trees. Lower spray pressure and boxed/painted young trees are keys to crop-safe glyphosate use.

Spray glyphosate at the right time. Spray weeds early and when they are not stressed. Don't let weeds go to seed, or even form flowers/release pollen. Smaller weeds are easier to kill than more mature plants of the same species. Dry and dusty weeds are less sensitive to glyphosate than unstressed weeds.

Consider using pre-emergent herbicides to control a broad spectrum of weeds, including those with or creeping towards glyphosate resistance. Effective new products -- Alion, Pindar GT, Matrix, Chateau and others -- give growers and PCAs many tools for pre-emergent weed control. For best results, these materials generally require rain or irrigation water to move them into the soil and a clean soil surface when applied. If the pre-emergent herbicide you are using has no post emergent activity and the glyphosate resistant weed that you are trying to control has already germinated, combining the pre-emergent with glyphosate will most likely not be effective – for example glyphosate plus surflan on 3 inch tall resistant ryegrass. In this case, include a herbicide in the tank that is effective on the glyphosate resistant weed in the field.

Check, then control, then check control. Walk the field to see what weeds are present before spraying, match herbicide to the weeds present, and check control after spraying. How did you do? See any weeds “coming through” your glyphosate spray? If you do, work with your PCA to add products or practices to control those uncontrolled weeds. Hand weeding a few rogue weeds before they go to seed might save you a lot of trouble.

Get help:

- identifying your weeds
 - check their susceptibility to herbicides
- on the **Weed Research and Information Center** website: (<http://wric.ucdavis.edu>)

Doesn't all this cost extra? YES. Glyphosate resistance management costs extra, but it costs less than farming without effective glyphosate.

Management of Peach Leaf Curl

– New Approaches

Excerpted from a recent article by:

Dr. Jim Adaskaveg (Plant Pathologist -UCR)

Janine Hasey (Farm Advisor, Sutter-Yuba Counties)

Roger Duncan (Farm Advisor, Stanislaus County)

Peach leaf curl is caused by a yeast-like fungus called *Taphrina deformans*. The disease can cause significant crop damage and needs to be managed every year. The disease can be especially severe if treatments are not timed properly or when environmental conditions are extremely favorable for disease (ie. prolonged and heavy winter rainfall).

The leaf curl pathogen most likely survives the warm, dry summer period as resistant structures called ascospores. With the fall and winter rains arrive, the ascospores germinate and the cells divide and multiply. They will grow to completely cover the twigs and buds as long as the weather is wet if they are not controlled.

Since the disease needs to be controlled over extended periods of wetness, copper products with their long residual activity have been a standard treatment. Recently, formulations of fixed coppers have been developed with reduced metallic copper equivalent (MCE). The efficacy of these new products when used at lower rates has not been as good over long, rainy winter seasons. They need at least two applications made at the upper label rate with a sticker or winter oil as an adjuvant to increase persistence.

Because of increased costs of the copper products and the need to prevent over-usage of copper in agricultural ecosystems, we have recently identified several products that are equivalent or even more effective than copper for managing peach leaf curl. Products such as ziram, chlorothalonil (e.g. Bravo, Echo, Equus) and dodine (Syllit) when applied at optimal timings are effective treatments. Overall, ziram has been most effective. The long residual activity of ziram and chlorothalonil is a needed characteristic for managing the disease with minimal (one or two) late fall or winter applications. In years with high rainfall in late fall and winter, higher rates and at least two applications of these materials should be used. The first should be applied in late November/early December and the second in January/early February. Under low rainfall conditions during the winter period, a single late November/early December application of ziram has been very effective in our trials.

Different strategies have been suggested for managing leaf curl. Some product labels indicate only bud swell or pre-bloom applications, whereas others indicate dormant (late November/early December) and delayed dormant (January/early February) treatments. For all the products that we evaluated in California, *the pre-bloom application is the least effective timing after a wet winter*. The most effective timings are the late November/early December followed by the January/early February application. Both are important during wet winters. The goal of these timings is to prevent high inoculum populations from developing on tree surfaces that allow bud infestation and subsequently early infection of developing leaves. The use of only pre-bloom treatments allows for high populations to develop during tree dormancy and thus, populations cannot be reduced to low levels that allow highly effective disease control.

Optimizing strategies:

- Apply a late November/early December treatment *before* significant rainfall has occurred and *after* most leaves have fallen from trees to ensure excellent coverage of branches, stems, and buds. (This spray will also control shot hole).
- Apply an additional January/early February treatment if high rainfall occurs in December and early January
- Apply an additional pre-bloom (bud swell or two weeks before bloom) treatment if high rainfall occurs in February
- The order of importance of applications is:
 1. dormant (late November/early December)
 2. delayed dormant (January/early February),
 3. pre-bloom (two weeks before bloom) for environments favorable for disease.
- Apply treatments at a minimum of 100 gal/A. Higher gallonage (120-150 gals/A) generally improves coverage.
- Use an adjuvant such as oil or a sticker to increase persistence.
- Use higher labeled rates of new formulations of copper products (e.g., minimum of 3-4 lbs MCE/A/application) to increase effective residues that are toxic to the pathogen.
- For ziram, use 6-8 lbs/A for long-range forecasts of high precipitation and a minimum of 4-6 lbs/A for drier forecasts under California conditions.
- For chlorothalonil and dodine, plan to make at least two applications in northern peach production areas of California where higher rainfall occurs. A single application may be sufficient in southern peach growing districts of California.

Fertilize Alfalfa in the Fall

By Michelle Leinfelder-Miles, Farm Advisor, Delta Crops

With the onset of fall, it is time to address alfalfa fertilization. Two nutrients that alfalfa frequently needs are phosphorus and potassium. These should be applied between October and February because it could take 60 to 90 days for the crop to fully respond to fertilizer applications.

A deep rooted crop, alfalfa can scavenge nutrients from where other crops cannot, but because it has a long growing season, alfalfa has a long season of nutrient demand. Additionally, each cutting removes large amounts of nutrients with the plant tissue. Therefore, proper nutrition is important in maintaining alfalfa yield and quality year after year.

In general, plants need three nutrients – nitrogen (N), phosphorus (P), and potassium (K) – in the largest quantities. Nitrogen fertilizer is seldom required or profitable in alfalfa because root nodules contain N fixing Rhizobium bacteria. Assuming good nodulation, N fertilizer should not be applied because it can promote undesirable weed growth. Phosphorus and K fertilizers, however, are frequently needed by alfalfa plants. Phosphorus – important for seedling vigor, root development, and early season growth – is the most commonly deficient nutrient because it can get tied up by the soil. Phosphorus deficiency may be difficult to diagnose because it can be mistaken for moisture stress, but in general, plants are stunted and have smaller leaves. Potassium is often required because large amounts of it are removed with each cutting. Additionally, sandy soils and/or soils with a long history of alfalfa production can be low in K. Potassium deficiency appears as pinhead sized white or yellow spots on new leaves and yellow to brown edges on mature leaves.

While visual deficiency symptoms are one way to assess the nutrient needs of your alfalfa, sampling soil and plant tissue are more reliable ways to assess P and K status. If you do not usually test soil or plant nutrient status, it would be a good habit to start next spring. The best time to sample soil is after an irrigation or rainfall when the soil is moist. The best time to sample tissue is at 1/10 bloom. A yield response to fertilizer is very likely when soil or leaf nutrient levels are in the deficient range. Phosphorus is deficient when soil levels are <5 ppm (using bicarbonate extract in the laboratory analysis) and

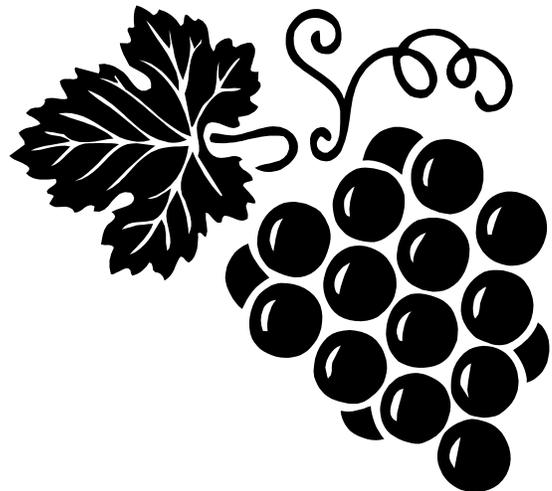
leaf levels are between 300-500 ppm PO₄-P (when plant samples are taken at 1/10bloom). Potassium is deficient when soil levels are <40 ppm (using ammonium acetate extract in the laboratory analysis) and leaf levels are between 0.40-0.65% (when plant samples are taken at 1/10bloom).

Use a granule (0-45-0, 11-52-0) or liquid (10-34-0) fertilizer to correct P deficiency. These sources are the most economical. If soil or plant tissue tests showed deficient levels, then apply P at a rate of 120-180 lbs P₂O₅/acre (if yield was around 8 tons/acre) and at a rate of 180-270 lbs P₂O₅/acre (if yield was around 12 tons/acre).

Use muriate of potash (0-0-52) to correct K deficiency, or use potassium sulfate (0-0-52, 18% sulfur) if sulfur was also deficient. Correct K deficiency by applying it at a rate of 300-400 lbs K₂O/acre (if yield was around 8 tons/acre) and at a rate of 400-600 lbs K₂O/acre (if yield was around 12 tons/acre).

Single applications of P should not exceed 100-150 lbs P₂O₅, and single applications of K should not exceed 200-300 lbs K₂O. If soil or tissue tests indicate that high rates are needed, like the aforementioned rates, then apply half of what is needed in late fall/early winter and the other half after the second or third cutting. Both P and K are effectively taken up by plants whether preplant incorporated or surface applied in established stands.

Use these rates to guide your fertilizer applications – remembering that soil type, climate, and yield will influence fertilizer needs – and keep good records of all laboratory results, fertilizer applications, and crop observations. These records will be helpful in developing a long-term, economical fertilization program.



Red Blotch – A New Grape Disease

Excerpted from the National Clean Plant Network Fact Sheet, Feb 2013. See the complete text with photos here: ([NCPN-Grapes](#))

What is red blotch?

Grapevine red blotch-associated virus (GRBaV), is the latest addition to the list of more than 75 graft-transmissible agents that have been identified in grapevines. This recently reported virus is associated with the emerging red blotch disease that was described for the first time on Cabernet Sauvignon in Napa Valley in 2008. There is a very good correlation between the presence of GRBaV and red blotch symptoms, but this correlation does not prove causality.

What are the symptoms of red blotch?

Vines with red blotch disease show symptoms much like leafroll disease. Like leafroll, leaves turn red in early fall primarily at the base of the shoots. Unlike leafroll, vines with red blotch disease show pink/red veins on the leaf undersides and no rolling.

How serious is it?

Red blotch disease can result in a significant reduction in sugar accumulation - up to 5°Brix. Much is still unknown about effect on yield and possible differences in cultivars and rootstocks.

Where has it been found?

Findings suggest a wide geographic distribution, as well as a widespread occurrence in red and white vinifera cultivars. Infected vines have been identified in California, New York, Virginia, Maryland, Pennsylvania, Texas and Washington. GRBaV was found both in young (first leaf) and mature (5-20-yr old) vineyards. The sequence of a virus nearly identical to GRBaV was also obtained in Canada. GRBaV has been detected in Cabernet franc, Cabernet Sauvignon, Chardonnay, Malbec, Merlot, Mourvèdre, Petite Syrah, Petit Verdot, Pinot noir, Riesling and Zinfandel.

When was it found?

Investigations into what appeared to be a new disease began in 2009. Grapevine red blotch associated virus was reported in independent studies in California and New York in 2012.

How does it spread?

Based on the wide host and geographic distribution of GRBaV and the fact that the virus is transmitted by grafting, it is likely that spread primarily occurs through

propagation material. Also, an increased incidence of GRBaV over time in young, healthy vineyards that are adjacent to old, infected vineyards suggests the existence of a vector.

How is it treated?

Like other viruses, once it is present in a vineyard there is no cure. However, evidence suggests that GRBaV can be eliminated using microshoot tip culture, the same method used to eliminate other viruses, to establish clean Foundation vines.

What kind of virus is it?

Analysis of the genomic nucleotide sequence indicates a new circular, monopartite DNA virus that is tentatively assigned to the family *Geminiviridae*.

How is it detected? How can I get my vines tested?

GRBaV can be detected by a PCR test. Several labs offer a test for GRBaV.

[For a list of commercial labs in north and central California, [click here](#)]

What is the status of vines at Foundation Plant Services at Davis?

All of the vines planted at the new Russell Ranch Foundation vineyard have been tested for red blotch and none of them are infected. The Classic Foundation Vineyard has been partially tested and the incidence of GRBaV is very low. Test records are available on the Foundation Plant Services website <http://fps.ucdavis.edu>

What is being done?

Studies are ongoing to investigate the role of GRBaV in red blotch disease, monitor incidence and spread, improve detection techniques, and evaluate the efficacy of microshoot tip culture for virus elimination.

For the latest information see:

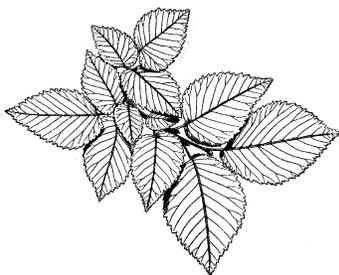
- Integrated Viticulture Website: <http://iv.ucdavis.edu>
- [Grapevine Red Blotch Disease](#) website: by Rhonda Smith, Viticulture Farm Advisor, UC Cooperative Extension, Sonoma County. Includes photographs of symptom development in vines, a summary of national research results from 2013, and plans for future work. Click on the link above or find it in the Pest & Disease tab in the Viticulture section of the Sonoma County website: <http://cesonoma.ucanr.edu>
- Attend the Red Blotch Disease Seminar on Nov 14 – in Davis or Napa - see Calendar section for details.

ANNOUNCEMENTS

New Pomegranate Information

Pomegranate cultivation has surged over the past decade in California. The industry has grown rapidly from 4,800 acres harvested in 2001 to 28,000 acres harvested in 2011. University of California Cooperative Extension Farm Advisors and Specialists have been working hard to meet the demand for information about successful cultivation of pomegranate in California's unique climate and soils. Three new sources of pomegranate information available from UC include:

- Fresno County Cooperative Extension office has set up a **Pomegranate Program website** that includes loads of information on production, costs, pests and disease, statistics, post harvest handling. It also has archived presentations from past meetings. Find it at: <http://ucanr.org/sites/pomegranates/>
- The Fruit and Nut Research and Information Center (FNRIC) has just launched a new Pomegranate Education Section on their website that contains a wealth of information about: propagation, scion selection, orchard establishment, pests, harvest and postharvest practices, images of pomegranate cultivars, links to additional resources. Find it at: <http://fruitsandnuts.ucdavis.edu> - Click on Fruit & Nut Information, then on Pomegranate.
- The UC Integrated Pest Management (IPM) Program has recently updated and expanded their Pest Management Guideline on Pomegranate. It contains background information on all the major pests as well as up to date monitoring and treatment information. Find it at: <http://www.ipm.ucdavis.edu> - Click on Agricultural Pests – then Pomegranates.



Agricultural Film and Drip Tape Recycling

We've converted a lot of annual acreage to drip in recent years but there haven't been too many options for recycling the used drip tape. Aeiplus Inc. is a company headquartered in North Carolina that has a national recycling program for both drip tape and agricultural film. According to their promotional materials:

- They arrange for pick up
- They pay you for "qualifying" material (instead of you paying the landfill)
- The plastic should be baled and as clean and dry as possible.

I don't know anything about this company other than what I read in their promotional materials but since I have had several growers ask if I know of any recycling options, I thought I would pass the information along. To find out more about their programs contact:

Carol Konchinski
704-827-3828 Mon-Fri 9:00am to 4:30pm EST
E-MAIL: info@aeiplus.com, ck@aeiplus.com
Web: www.aeiplus.com

Environmental Quality Incentives Program (EQIP)

The application deadline for EQIP funded projects for 2014 is November 15, 2013. EQIP is one of several voluntary Farm Bill Conservation USDA programs. The program offers technical assistance and cost share funding to agricultural producers for a wide variety of practices that help to improve natural resource conditions, including grazing land management, wildlife habitat, soil conservation, water quality, and integrated pest management. It promotes agricultural production and environmental quality as compatible goals. Additional financial assistance is available for beginning and disadvantaged producers. Applicants must meet income eligibility requirements. More information is available at: www.acrcd.org.

To apply, contact:

Alameda County: Alyson Aquino,
District Conservationist, 925-371-0154 ext 116,
alyson.aquino@ca.usda.gov

Contra Costa County: Hillary Phillips,
District Conservationist, (925) 672-4577 x 102,
Hillary.Phillips@ca.usda.gov

NEW UC ANR PUBLICATIONS

Preview, order or download publications at:

<http://anrcatalog.ucdavis.edu>

Type the publication number into the search box

Or use the direct links below for the FREE publications.

NEW PRODUCTION MANUAL:

Fresh Market Caneberry Production Manual

By Mark Bolda, Mark Gaskell, Elizabeth Mitcham

Caneberry consumption is increasing in the US and elsewhere around the world—with California producing over 90 percent of the fresh market raspberries grown in the US. This is the first caneberry production manual designed for western fresh market growers. It is chock-full of accurate and detailed information on raspberry and blackberry production that no Western grower should be without.

(Publication #3525)

\$25.00

**Enter code PRCC7 at checkout
for a 10% discount**

FREE PUBLICATIONS – On Glyphosate Resistance:

Selection Pressure, Shifting Populations, and Herbicide Resistance and Tolerance

(Publication 8493),

A good herbicide will control the current population of weeds, but also create a powerful "selection pressure". Any weeds that survive its effects will go on to thrive, immune to any further applications. Learn how to keep selection pressure in check. **FREE**

<http://anrcatalog.ucdavis.edu/pdf/8493.pdf>.

Preventing and Managing Glyphosate-Resistant Weeds in Orchards and Vineyards

(Publication 8501),

Rely too much on any one herbicide and you end up with weeds that will resist its effects—and that's just what is happening now with glyphosate (Roundup). See how you can increase effectiveness by diversifying your weed-management strategies. **FREE**

<http://anrcatalog.ucdavis.edu/pdf/8501.pdf>.

Glyphosate Stewardship: Maintaining the Effectiveness of a Widely Used Herbicide

(Publication 8492)

Glyphosate (Roundup) is very effective against weeds, but you can't use it just any old way or you'll end up encouraging the development of resistant weeds. Learn to find the best timing, mix, and application method, and complementary control methods. **FREE**

<http://anrcatalog.ucdavis.edu/pdf/8492.pdf>.

Managing Glyphosate-Resistant Weeds in Glyphosate-Resistant Crops

(Publication 8494)

Glyphosate-resistant crops made farming a lot easier when they first came out, but then the weeds started to catch on, too. Nowadays, herbicide-tolerant crops will only work as part of a more comprehensive, Integrated Pest Management plan. **FREE**

<http://anrcatalog.ucdavis.edu/pdf/8494.pdf>.

MORE FREE PUBLICATIONS:

Controlling Offsite Movement of Agricultural Chemical Residues: Winegrapes

(Publication 8456)

Pesticides can be a boon to farms, but residues that reach ground or surface waters threaten wildlife, water quality, and human health. This publication shows how to rate your farm's potential for harm and act to keep these chemicals under control. **FREE**

<http://anrcatalog.ucdavis.edu/pdf/8456.pdf>.

Cover cropping and Conservation Tillage in Processing Tomatoes

(Publication 8404)

By using cover cropping and conservation tillage, processing tomato growers can reduce their costs and improve their soil at the same time, while still producing an economical crop. **FREE**

<http://anrcatalog.ucdavis.edu/pdf/8404.pdf>.

Low Cost Methods of Measuring Diverted Water

(Publication 8490)

California Water Resources Board rules say you have to measure and report the amount of water you divert from surface waters for farming. Pasture and low-value crops can't cover the cost of commercial measuring tools, but there are cheaper alternatives outlined in this publication. **FREE**

<http://anrcatalog.ucdavis.edu/pdf/8490.pdf>.

Onion Seed Production in California

(Publication 8008)

FREE

<http://anrcatalog.ucdavis.edu/pdf/8008.pdf>.

Pumpkin Production in California

(Publication 7222)

FREE

<http://anrcatalog.ucdavis.edu/pdf/7222.pdf>.

Sweet Potato Production in California

(Publication 7237)

FREE

<http://anrcatalog.ucdavis.edu/pdf/7237.pdf>.

FROM AG & RESOURCE ECONOMICS, UCD

Download for FREE at <http://coststudies.ucdavis.edu>

Click on [Current Cost & Return Studies]

Select the commodity of interest in the drop box

Choose from studies listed

or call (530) 752-3589 for a copy:

- **Sample Costs to Produce Organic Walnuts, 2013, North Coast**
- **Sample Costs to Produce Organic Alfalfa Hay, 2013, California**
- **Sample Costs to Establish and Produce Walnuts, 2013, Northern San Joaquin Valley**
- **Sample Costs to Establish and Produce Wine Grapes, 2013, Sacramento Valley**

FROM THE UC IPM PROGRAM

Download for FREE at: <http://www.ipm.ucdavis.edu/>

Click on the "Agricultural Pests" box

Then select the crop of interest

New and Updated Pest Management Guidelines for:

Alfalfa	Asparagus	Caneberries
Carrot	Cherry	Citrus
Cotton	Curcubits	Kiwifruit
Peppermint	Pomegranate	Walnut

UC WEBSITES

UC Fruit and Nut Research & Information Center

<http://fruitsandnuts.ucdavis.edu>

- Crop Information
- Chill unit accumulation
- Irrigation, nutrition, water quality information

UC Vegetable Research & Information Center

<http://vric.ucdavis.edu>

- Crop & production information
- Good Agricultural Practices & Food Safety

UC Agronomy Research & Information Center

<http://agric.ucdavis.edu/>

- Crop information – alfalfa, grains, specialty crops

UC IPM Program

<http://ipm.ucdavis.edu>

- Pest Management Guidelines
- Weather data & chill unit accumulation
- Degree day models & interactive tools
- Pest photo gallery

UC Weed Research & Information Center

<http://wric.ucdavis.edu>

- Weed ID & photo gallery
- Herbicide efficacy guidelines
- Poisonous plant information

UC Postharvest Technology

<http://postharvest.ucdavis.edu>

- Produce Facts (postharvest handling guidelines for over 100 individual commodities)
- Post harvest resources directory

UCD Agriculture & Resource Economics

<http://coststudies.ucdavis.edu>

- Cost of Production studies

UC Sustainable Agriculture Research & Education Program

<http://sarep.ucdavis.edu>

- Cover crop database
- Organic farming information/links

UC Small Farm Center

<http://www.sfc.ucdavis.edu>

- Agritourism
- Specialty crops
- Direct marketing

UC Integrated Viticulture

<http://iv.ucdavis.edu>

CALENDAR

November 7

SPRAY SAFE PROGRAM WORKSHOP

[Stanislaus County UCCE Office](#), Harvest Hall,
3800 Cornucopia Way, Modesto
8:00 a.m. - 12:30 p.m.

Sponsor: UC Cooperative Extension

Cost: FREE - no pre-registration, lunch provided

Credit: 3.5 CEU's of Laws & Regs

Contact: Roger Duncan at (209) 525-6800.

November 7

CROP PLANNING WEBINAR

9:30 – 11:00 am

Sponsor: CA Certified Organic Farmers (CCOF)

Cost: \$15 for CCOF members, \$20 for non-members,
limited to 100

Register: (831) 423-2263, ccof@ccof.org,

www.ccof.org

November 14

RED BLOTCH DISEASE SEMINAR

By - Dr. Marc Fuchs, Plant Virologist & lead
researcher on this disease at Cornell University

- **10 am to 11 am**
UC Davis Conference Center Ballroom
FREE to attend, but [registration is required](#)
- **3 pm to 4 pm**
Napa Wine + Grape Expo at the Napa Valley Expo
Fairgrounds, 575 Third Street, Napa.
The Fuchs seminar will be FREE to attend but
registration is required if you also plan to attend
the full day's events at the [Napa Wine + Grape
Expo](#).

November 20, 2013

CONTRA COSTA COUNTY PESTICIDE APPLICATORS CONTINUING EDUCATION CLASS

8:00am – 12:00pm

Diablo Valley Farm Center,
3020 2nd St (at Delta Rd), Knightsen

Sponsors: Contra Costa County Ag Dept & UC
Cooperative Extension

3 hours of CE units for PCA, QAL, QAC, Private
Applicators (last names beginning with I-Q will be
recertified this year)

November 21

MITE ID AND MANAGEMENT WORKSHOPS

[Stanislaus County UCCE Office](#),

3800 Cornucopia Way, Suite A, Modesto

8:30 AM to 12:45 PM

For: Pest Control Advisors & Growers

Sponsors: UC Cooperative Extension & UC IPM

Instructors: David Haviland, Farm Advisor, Kern Co
& Kim Horton, Biological Crop Protection Specialist
& California Production Manager, BioBest

Cost: \$60 before 11/7, \$70 after; limited to 50 people

Register: http://ucanr.edu/sites/Mite_ID_Workshop/

November 22

CURRENT ISSUES IN VINEYARD HEALTH

9 AM – 4 PM

Cost: \$190, includes course material and lunch

Sponsor: UC Davis Extension

Contact: (800) 752-0881;

www.extension.ucdavis.edu/wine

December 11-13

WESTERN ALFALFA & FORAGE SYMPOSIUM

[This is a comprehensive conference covering all
aspects of forage production including alfalfa and
different hay crops, silages, economics, irrigation,
and pest management.]

At: Peppermill Hotel Casino, Reno, NV

Sponsors: The Cooperative Extension Services of
AZ, CA, CO, ID, MT, NV, NM, OR, UT, WA,
WY CE Credits offered.

Cost: \$195

Info & Registration: <http://ucanr.edu/sites/Alfalfa/>

December 12

SUSTAINABLE WINEGROWING FOR AG PROFESSIONALS

[To inform various agricultural professionals
(consultants, Farm Advisors, academics, RCDs,
NRCS, Ag Dept. staff, PCAs, CCAs, winery
representatives, certification auditors, students...) about programs and resources that can augment their existing expertise and tools on sustainable wine growing.]

At: Robert Mondavi Institute, RMI Sensory Bldg.
392 Old Davis Road, UC Davis

8:00 AM – 2:30 PM

Wine & Cheese Reception: 2:30 PM

Cost: \$30 per person (includes continental breakfast, lunch, tour of the UC Davis Sustainable Winery)

Sponsors: California Sustainable Winegrowing Alliance (CSWA)

Registration:

<https://wineinstitute.wufoo.com/forms/sustainable-winegrowing-for-ag-professionals/>

More Information: Kate Venugopal
kvenugopal@wineinstitute.org or 415.356.7548.

2014

January 22- 25

34TH ANNUAL ECOFARM CONFERENCE

[For over three decades, this event has brought food system stakeholders together for education, networking and celebration.]

At: Asilomar Conference Center, Pacific Grove

Cost: \$320 + options for meals, lodging, tours, single day; scholarships & work trade options available

Sponsor: Ecological Farming Association & more

Schedule & Registration: <http://www.eco-farm.org>

Early reg discount before Dec 7

January 28-30

UNIFIED WINE & GRAPE SYMPOSIUM

Sacramento Convention Center

8 am – 5 pm

Sponsor: ASEV & CAWG

Cost: \$30 - \$689

Contact: (888) 559-9530;

www.unifiedsymposium.org/

February 5-6

COLUSA FARM SHOW

Colusa County Fairgrounds

9am – 5 pm

FREE

Contact: 530-458-2641; www.thefarmshow.com

February 11-13

TULARE WORLD AG EXPO

International Agri-Center, Tulare

Cost: \$30

Contact: 1-800-999-9186; www.worldagexpo.org

February 12

CURRENT WINE & WINEGRAPE RESEARCH

9 am – 6 pm

UC Davis Conference Center

Cost: \$49

Sponsor: UC Davis Extension & American Vineyard Foundation

Contact: (800) 752-0881;

www.extension.ucdavis.edu/wine

February 24 – March 6

PRINCIPLES OF FRUIT & NUT TREE GROWTH, CROPPING, AND MANAGEMENT

[Understanding the fundamentals of tree biology is essential to making sound orchard management and business decisions. This nine day course incorporates lecture, lab, field demonstrations and a 4 day field trip throughout the fruit and nut growing regions of Northern & Central California. Taught by UC Faculty, Extension Specialists and Farm Advisors.]

At: UC Davis and beyond

Cost: \$2,850 for entire course; lecture only & field trip only options available

Sponsor: Fruit & Nut Research and Information Center at UC Davis

Contact: Penny Stockdale - pastockdale@ucdavis.edu, 530-752-7672

March 9-11, 2014

CALIFORNIA SMALL FARM CONFERENCE

[The state's premier gathering of small farmers, agricultural students, farmers' market managers and others involved in the small farm industry. The three day educational conference includes day-long short courses and on-farm tours; focused workshops; engaging keynote addresses and numerous networking opportunities.]

At: Double Tree Hotel, Rohnert Park, CA

Info & Registration:

www.californiafarmconference.com

CROP CURRENTS

Hope you find something of interest in this issue.

Janet Caprile
Farm Advisor
jlcaprile@ucdavis.edu

NOVEMBER 2013

- **CCC Pesticide Applicators Continuing Education Class**
- **Olive Fly Damage**
- **Saving Glyphosate**
- **Management of Peach Leaf Curl – New Approaches**
- **Fertilize Alfalfa in the Fall**
- **Red Blotch – a New Disease of Grape**
- **Announcements – Pomegranate info, drip recycling, EQIP**
- **UC Publications, Websites**
- **Calendar**

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TIME SENSITIVE MATERIAL

UCCE – CONTRA COSTA COUNTY
75 SANTA BARBARA RD, 2ND FLOOR
PLEASANT HILL, CA 94523-4215